

SOME LIFE HISTORY NOTES ON THE BLACK WIDOW
SPIDER *LATRODECTUS MACTANS*.¹

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This spider in livery of shining black decorated with bright red blotches, and called by Comstock the black widow spider, is often found in the vicinity of St. Louis under rocks and debris in sunny pastures. One specimen, with its round, white egg-case, was taken from her web high up in a corner of a barn on June 23, 1922.

In captivity she made four more of these egg-cases, on June 24, July 12, August 4 and August 15 respectively. After the making of each, her abdomen was shrunken to about half its former size, but it soon returned to normal proportions. Despite the fact that this individual had not access to the male, after its capture, the eggs in all five cocoons were fertile; this circumstance shows that it is not necessary for mating to precede each case of oviposition.

All the young in each cocoon emerged from one hole the size of a pin-head, probably made by the first restless spiderling. The emerging young of two cocoons were counted; one gave forth 101, and the other 92 spiderlings. The young at emerging do not resemble the mother, whose color is black and red, but they are all of a medium shade of brown. While the young do not spin nests of any certain form, they do spin webs of criss-cross threads to which they cling. Fig. 1 shows a young spider (enlarged four times) clinging to these strands. In the glass cage in which they were kept, they almost always rested with the ventral surface of the body upwards, and with four or more legs holding on to the strands of criss-cross silk, as figured above.

While one seldom sees a nest of definite contour when one finds these adult spiders under stones, here confined in a large glass box (an unused aquarium), this spider made a large hollow

¹Identified by Mr. J. H. Emerton.



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nest in which she spent all of her time except when prowling. Here too she made the cocoons, and here they reposed until such a time as the mother chose to kick them out. Fig. 2. shows the nest, natural size, with two cocoons, and the mother clinging to the lower one; just above is the larva of a mud-wasp which I dropped there for food. The spider was fed wasp larvæ of various species, white grub worms and grasshopper nymphs in this way, by dropping them on the web. The spider would always carry these morsels to the bottom of her cup-like den and spin a web around the food. The manoeuvres were always carried on at night, however. The young were less timid, and would feed upon the wasp larva at various times during the day. This was done by merely standing upon it and sucking out its juices. There was no evidence of the very young spiders covering the prey with web. The mother spider occasionally fetches the prey from some little distance and carries it into the nest. I once placed the quiescent prepupa of the mud-dauber on the floor of the cage three inches away; during the night she removed this to her nest. This shows not only that she can move loads as large as herself over and through her webby entanglements, but also that her prey need not be active to attract her attention.

The spider kept the nest very tidy, and carried out all the dried remains of her food that had accumulated. She did not do this every day, but occasionally when the accumulation of rubbish became conspicuous she turned in for the general house-cleaning. I once arrived in time to see the latter part of one of these affairs at 6 a. m. This activity is also usually a night affair, but this time she did not finish until after day-break. Just as I arrived, she took up her last fragment, a dried grasshopper nymph, from the bottom of her lair, carried it by a circuitous route up to the rim of the hollow and cast it overboard where it dropped to the floor. She carried it in a queer fashion; with one hind leg she held it close to the tip of her abdomen while she slowly picked her way among the criss-cross threads of her web, until she reached a point from where it could be dropped below. All of the debris had been carried out during the night, and most

of it had been carried some distance away. Most of the rubbish lay scattered at a distance of from eight to fifteen inches from the nest.

Her actions in regard to cleanliness appealed to me as commendable until I discovered that in her zeal she had also carried out and thrown away her own cocoon which she had just made; I wondered if she was not "throwing out the baby with the bath." Such a mental lapse or miscarriage of instinct caught my attention at once, and I watched for developments. But during the next few days, her behavior exhibited nothing short of maternal solicitude. As related above, in her early morning house-cleaning, she carried out the cocoon to a distance of eight inches, where it lay apparently discarded. The second morning thereafter I found the nest clean and the debris still scattered where she had dropped it. At 8 a. m. I dropped into the criss-cross webs above her den two wasp larvæ and a horse-fly, to tempt her appetite. At 9 p. m. the same day, I found the food items just where I had placed them, but to my astonishment, the cocoon that had lain on the floor eight inches away was now in the web, about two inches above her hollow nest, and the mother was clinging tenaciously to it. I promptly withdrew to avoid alarming her. My interpretation was that she was carrying the cocoon back to her den; an hour later when I again switched on the light, I found the cocoon nicely at rest on the bottom of the nest, and the mother clinging (I wish I dared say affectionately) to it. Her memory of her lost cocoon never failed her during the period of two and one-half days.

Quite likely the instinct-monger will interpret this behavior as a matter of accident; he will say that instinctively the spider carries food to the nest, and merely grabbed the cocoon in error. But I repeat that on top of the web were still entangled, three choice pieces of food that had remained untouched since morning, but she did not drag these nearby articles of food into her nest, but went afar and brought in the cocoon which she, in the heat of house-cleaning excitement, had discarded. Furthermore, let anyone who doubts the existence of maternal instinct here look at the picture and see the